

REMARKS/ARGUMENTS

Applicant would like to thank Examiners McElwain and Helmer for the courtesies extended during the interview conducted July 16, 2004.

Upon filing of this Request For Continued Examination and Preliminary Amendment, claims 1 and 3 have been canceled and new claims 11-27 have been added. Claims 11-27 are pending in the present application.

New independent claim 11 recites "A transgenic bioluminescent plant that expresses at least one marine derived luciferase, luciferin or fluorescent protein of a bioluminescent generating system, wherein reaction of at least one other component of the bioluminescent generating system with the at least one marine derived luciferase, luciferin or fluorescent protein causes the transgenic plant to illuminate." Basis for the living transgenic bioluminescent plant of claim 11 can be found, for example, in the specification at page 131, lines 30-31 to page 132, lines 1-16. Basis for the plant of claim 11 that expresses at least one ... luciferase, luciferin or fluorescent protein can be found, for example, in the specification at page 131, lines 30 and page 58, lines 20-29. Basis for the luciferase, luciferin or fluorescent protein of claim 11 being a marine derived luciferase, luciferin or fluorescent protein can be found in the specification, for example, at page 3, lines 6-9. Basis for the at least one other component of the bioluminescent generating system of claim 11 can be found, for example, in the specification at page 24, lines 24-26.

New independent claim 16 recites "A combination, comprising a living transgenic bioluminescent plant that expresses at least one marine derived luciferase, luciferin or fluorescent protein of a bioluminescent generating system; and plant food that comprises at least one other component of the bioluminescent system, wherein supply of the plant food to the transgenic plant causes the transgenic plant to illuminate." Basis for the living transgenic plant of claim 16 can be found, for example, as identified above with respect to claim 11. Basis for the plant food that comprises at least one other component of the bioluminescent system can be found, for example, at page 131, lines 30-31 to page 132, lines 1-16.

New independent claim 21 recites "A method for producing a glowing plant, comprising: providing a living transgenic bioluminescent plant that expresses at least one marine derived luciferin, luciferase or fluorescent protein of a bioluminescent generating

system; providing plant food that comprises at least one other component of the bioluminescent system; and contacting the transgenic bioluminescent plant with the plant food to cause the transgenic bioluminescent plant to illuminate." Basis for claim 21 can be found in the specification, for example, at page 131, lines 30-31 and page 132, lines 1-16.

New dependent claims 12 and 17 recite "The bioluminescent plant of claim (11 or 16), wherein the bioluminescent plant emits sufficient illumination to be visible by the unassisted eye." New dependent claim 21 recites "The method of claim 21, wherein the transgenic plant emits sufficient illumination to be visible by the unassisted eye once contacted by the plant food." Basis for claims 12, 17 and 21 can be found, for example, in the specification at page 2, lines 6-7.

New dependent claim 13 recites "The bioluminescent plant of claim 11, wherein the transgenic bioluminescent plant is a living plant". Basis for claim 13 can be found, for example, in the specification at page 131-132 and in U.S. Patent No. 5,436,392 and U.S. Patent No. 5,432,081 both of which are incorporated by reference.

New dependent claims 14 and 18 recite "The bioluminescent plant of claim (11 or 16), wherein the at least one marine derived luciferase, luciferin or fluorescent protein is derived from a marine bacteria or a marine organism." New dependent claim 23 recites "The method of claim 22, wherein at least one marine derived luciferase, luciferin or fluorescent protein is derived from a marine bacteria or a marine organism." Basis for claims 14, 18 and 23 can be found, for example, in the specification at page 3, lines 6-9.

New dependent claims 15 and 19 recite "The bioluminescent plant of claim (11 or 16), wherein at least one marine derived luciferase, luciferin or fluorescent protein is derived from at least one of: the *Vibrio* species, arthropods, mollusks, echinoderms or chordates." New dependent claim 24 recites "The method of claim 22, wherein the components of a bioluminescent system are derived from at least one of: the *Vibrio* species, arthropods, mollusks, echinoderms or chordates." Basis for claims 15, 19 and 24 can be found, for example, in the specification at page 3, lines 7-9.

New dependent claim 20 recites "The combination of claim 16, wherein the plant food is a fertilizer." New dependent claim 25 recites "The method of claim 22, wherein the plant food is a fertilizer." Basis for claims 20 and 25 can be found, for example, in U.S. Patent No. 4,711,659 which is incorporated by reference.

New dependent claim 26 recites "The method of claim 22, wherein contacting the transgenic bioluminescent plant with the plant food comprises contacting roots of the transgenic bioluminescent plant." Basis for claim 26 can be found, for example, in the specification at page 132, lines 15-16.

New dependent claim 27 recites "The method of claim 22, wherein contacting the transgenic bioluminescent plant with the plant food comprises contacting foliage of the transgenic bioluminescent plant." Basis for claim 27 can be found, for example, in the specification at page 132, lines 15-16.

Applicant submits that the new independent claims each recite that the living transgenic bioluminescent plant expresses at least one marine derived luciferase, luciferin or fluorescent protein. The Examiner previously applied a literature article by Ow, et. al., Science, Vol. 234, No. 4778, pages 856-859 (1986) in a rejection of previous claims 1 and 3 pursuant to 35 U.S.C. 102(b). Claims 1 and 3 have been canceled and Applicant submits that the new independent claims are patentable over the applied references.

The Ow et. al. article teaches on page 856, first column, and the abstract, that a luciferase gene derived from fireflies can be transfected into plant cells. Each of Applicant's new independent claims recite that the living transgenic bioluminescent plant expresses at least one marine derived luciferase, luciferin or fluorescent protein. Accordingly, it is submitted that each of Applicant's independent claims, and the claims depending therefrom, are patentable over the applied references.


Furthermore, the Ow et. al. article teaches on page 858 third column, that when a plant transfected with firefly luciferase is exposed to photographic film for 15 to 60 minutes, a light emission can be detected. As recited in Applicant's dependent claims 12, 17 and 21, the transgenic bioluminescent plant emits sufficient illumination to be visible by the unassisted eye. Accordingly, it is submitted that Applicant's dependent claims 12, 17 and 21 are further patentable over the applied references because the illumination produced by Applicants'

transgenic bioluminescent plant is visible by the unassisted eye and does not require a long exposure to photographic film to be viewed.

Applicant submits that each of the new independent claims, and the claims depending therefrom, are patentable over the applied prior art. Applicant further submits that basis in the specification of Applicant's application can be found for each of the newly added claims. Accordingly, it is submitted that entry of the present amendments does not represent the addition of new matter. Entry of this Amendment is respectfully requested.

If it would facilitate prosecution of this application, the Examiner is invited to telephone the undersigned at (412) 263-4362 to discuss such matters.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Lara Northrop".

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